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Sovereignty and cooperation in regional Pacific tuna fisheries management: Politics, economics, conservation and the vessel day scheme

Quentin Hanich,* Hannah Parris† and Martin Tsamenyi*

Abstract

The Pacific islands region has developed a collaborative approach to fisheries management that has set global precedents in regional fisheries co-operation and significantly boosted Islanders' capacity to manage the region's tuna fisheries in a manner consistent with their individual national interests. Through this cooperation, the Pacific islands states have developed a collective influence in fisheries negotiations that is arguably far greater and more effective than what they could achieve individually. During 2007-2009, the Pacific islands region further developed its collective approach by establishing new initiatives in regional fisheries co-operation that are of global interest. Chief among these is the Vessel Day Scheme, which introduces a flexible and potentially tradeable permit scheme into regional management, and a supporting set of zonal based management measures. This paper examines the evolution and development of these recent management initiatives and provides a tentative evaluation of these against the conservation and management agreements entered into by the Pacific islands.

Introduction

Regional co-operation is vitally important in the Pacific islands region due to the migratory nature of the region's tuna stocks, and consequently the fisheries themselves, and the limited capacity of most Pacific island states¹ to take advantage of their rights and discharge their obligations under the United Nations Law of the Sea Convention² (LOSC) following the extension of maritime zones of jurisdiction. The Pacific island states have

developed a strong collective approach and recently established new initiatives in regional fisheries co-operation that are of global interest. These regional achievements are particularly impressive given the limited governance capacity of the region, and the fragile economic situation in many of the Pacific states. This paper examines the evolution and development of these recent management initiatives, with particular focus on the Vessel Day Scheme.

The Pacific island states and territories and their tuna fisheries

The Pacific islands region encompasses a unique grouping of small island states characterised by small land masses surrounded by large oceanic exclusive economic zones (EEZs). In total, these zones cover approximately 30 569 000 km² of the Western and Central Pacific Ocean (WCPO)³ and include some of its most productive fishing waters.

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¹ The Pacific Islands Forum Fisheries Agency (FFA) is a subsidiary body of the Pacific Islands Leaders Forum. It promotes coordination and cooperation on fisheries issues, particularly with respect to the region wide tuna fisheries. Membership mirrors that of the Forum and includes Australia, New Zealand, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu. For the purposes of this paper, the term 'Pacific island states' refers to FFA members except Australia and New Zealand.

² *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994).

³ For the purposes of this paper, the WCPO is defined as those waters within the Area defined by the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. This stretches from Indonesia and the Philippines in the west to Hawaii, Kiribati and French Polynesia in the east. This region is defined in *Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean*, opened for signature 5 September 2000 (entered into force 19 June 2004) art 1.

The WCPO tuna fisheries (skipjack, yellowfin, bigeye and albacore) were worth approximately A\$5.4 billion in 2008.⁴ Roughly 57 per cent of all WCPO catches are taken from the Pacific island EEZs, the remainder from high seas and other coastal states.

These fisheries are a key development opportunity for many of the region's developing island states and provide significant financial contributions to governments. Many Pacific island States, particularly in the western part of the region, depend heavily upon these fisheries for revenue and economic activity.⁵

The two key fleets in the Pacific islands tuna fisheries are distant water fishing vessels and domestic fishing vessels. Distant water fishing vessels provide the majority of the fleet and originate predominately from China, Japan, Korea, the United States, Taiwan and the European Union. They are either based within a Pacific island state (due to licensing requirements or operational factors) or operate from a distant home port. They catch the majority of the value in the fishery and operate through access agreements or are directly licensed by the coastal states to fish within their EEZ.

Domestic fishing vessels are either nationally owned and operated, or foreign owned and operated through domestic charters and/or joint ventures with local interests. They are generally smaller vessels that mostly fish for tuna within their own flag state's EEZ. The majority of such vessels are longliners, although in the past decade an increasing number of purse seiners have registered in Pacific island states

and are now considered to be domestically based vessels.⁶

These fisheries are coming under increasing pressure from overfishing and overcapacity. Scientific and economic advice has clearly stated that overfishing and overcapacity now threaten the long term sustainability of some key fish stocks⁷ with fishing effort significantly above optimal levels. This is reducing the profitability of the fishery and undermining opportunities for Pacific island states to develop fishing and related industries.⁸

Regional institutions for fisheries cooperation and capacity building

The Pacific islands states depend heavily upon regional cooperation and the effective operation of regional institutions to enable and support fisheries management and development. The success of this cooperation is critically important given the highly migratory nature of the region's tuna fisheries and the region's limited national capacity and its high dependence upon fisheries resources. Any serious threat to the sustainability of the tuna resource can be viewed as a threat to the region's economic viability and food security.

In 1979, the independent members of the Pacific Islands Forum (then named the South Pacific Forum) foresaw the challenges involved in managing and developing their newly proclaimed EEZs and recognised that individually they did not have the capacity to respond adequately to these challenges and maximise their opportunities. With remarkable vision, they combined their resources and established the Pacific Islands Forum Fisheries Agency (FFA) to promote intra-regional cooperation and harmonisation of fisheries management policies. The mission of the FFA is to support and enable Pacific island states to achieve sustainable fisheries

⁴ Robert Gillett, 'Pacific Islands Region' in Food and Agriculture Organization of the United Nations, *Review of World Marine Fishery Resources No 457* (2005) 144; Peter Williams and Peter Terawasi, 'Overview of Tuna Fisheries in the Western and Central Pacific Ocean, including Economic Conditions – 2008 WCPFC-SC5-2009/GN WP-1' (Paper presented at the Fifth Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, Port Vila, Vanuatu 10-21 August 2009). For the purposes of this estimate, this includes the EEZs of: (FFA members) Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu (and non-FFA members) American Samoa, French Polynesia, New Caledonia, Pitcairn Island, and the French territory of Wallis and Futuna. The data for this estimate was sourced from Gillett.

⁵ Asian Development Bank, *The Pacific's Tuna: The Challenge of Investing in Growth* (1997); Robert Gillett, Mike McCoy, Len Rodwell and Josie Tamate, *Tuna: A Key Economic Resource in the Pacific Islands* (2001).

⁶ Elizabeth Havice, 'The State of Play of Access Agreements with Distant Water Fishing Partners: Implications and Options for Pacific Island Countries', report to the Forum Fisheries Agency (2007).

⁷ See, eg. Anonymous, 'Report of the Scientific Committee, fourth regular session' (paper summarising the Fourth Regular Session of the Scientific Committee, Port Moresby, Papua New Guinea. 8-19 August 2008), available at Western and Central Pacific Fisheries Commission <<http://wcpfc.org.int>> at 17 January 2009.

⁸ Tom Kompas and Nhu Che, 'Economic Profit and Optimal Effort in the Western and Central Pacific Tuna Fisheries' (2005) 21 *Pacific Economic Bulletin* 46; Michel Bertignac, John Hampton and Anthony Hand, 'Maximising Resource Rent from the Western and Central Pacific Tuna Fisheries' (2000) 15 *Marine Resource Economics* 15.

and maximise their social and economic benefits in harmony with the broader environment.⁹

The FFA does not manage the tuna fisheries and has no such mandate to do so. Neither does it have any authority to enforce decisions of its governing council.¹⁰ This is an important feature of its operation that ensures that each member maintains full national decision making power over the fisheries within its EEZ. This principle of national implementation was central in the establishment of the FFA, as its formation caused some concern among DWFNs which interpreted the organisation as a regional fisheries management organisation and therefore should be open to the participation of DWFN with an interest in the tuna fisheries.¹¹ Some of these DWFN, particularly the United States of America (US), did not recognise the sovereign rights of coastal states over migratory fisheries,¹² or recognise the fundamental capacity building purpose of the FFA.

The FFA supports the interests of the Pacific island states by facilitating regional cooperation and providing technical and policy advice. Concerns over the role of the FFA were effectively laid to rest in the early 1990s when discussions began¹³ for the

establishment of the Western and Central Pacific Fisheries Commission (WCPFC).

The FFA works closely with the Oceanic Fisheries Programme (OFP) of its partner agency, the Secretariat of the Pacific Community (SPC).¹⁴ OFP is one of a number of SPC programs that aim to build capacity within the Pacific islands region and support members with technical assistance. The OFP provides fisheries science services to its members (primarily relating to tuna) and is also a contracted science provider for the Scientific Committee of the WCPFC.

Cooperative approaches to fisheries management and domestication

The FFA has been successful in its work to support sub-regional and regional cooperation relating to access by foreign fishing fleets into EEZs. In this area, the FFA has facilitated the development of a number of key regional arrangements.

The first of these arrangements, and the key driving force behind the later cooperative agreements, was established in 1982 by a sub-set of the FFA membership. The 1982 Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest (Nauru Agreement, 1982)¹⁵ was negotiated by the equatorial Pacific

⁹ Forum Fisheries Agency, *FFA Strategic Plan 2005-2020* (2005). Forum Fisheries Agency. <http://www.ffa.int/system/files/FFA_Strategic%20Plan.pdf> at 23 November 2009.

¹⁰ Transform Agorau, 'Cooperative Management of Shared Fish Stocks in the South Pacific' (Paper presented to Norway-FAO expert consultation on the management of shared fish stocks, Bergen, Norway, 7-10 October 2002).

¹¹ John Van Dyke and Susan Heftel, 'Tuna Management in the Pacific: An Analysis of the South Pacific Forum Fisheries Agency' (1981) 3 *University of Hawaii Law Review* 1.

¹² While some DWFNs (most notably the US) historically rejected interpretations of LOSC that granted coastal states sovereign rights over migratory species within their EEZs, the reality at sea moved on. For over 20 years, the status quo has reflected the coastal state interpretation and there is no indication that fishing states are likely to fish for tuna within EEZs without the permission of coastal states. It is now widely accepted that LOSC grants coastal states 'practically exclusive powers over regulating access' to the fisheries within their EEZ, including straddling and highly migratory fish stocks. See Erik Molenaar, 'Participation, Allocation and Unregulated Fishing: The Practice of Regional Fisheries Management Organisations' (2003) 22 *International Journal of Marine and Coastal Law* 454.

¹³ For a history of the FFA's role in the formation of the WCPFC, see Sandra Tarte 'A Duty to Cooperate: Building a Regional Regime for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific' in (2002) *Ocean Yearbook* 261. The organisational structures of the FFA and the secretariat allowed the Pacific island states to successfully act as a negotiating bloc against the larger DWFNs and thereby ensure that the text of the Convention was developed on terms favourable to them. See

Hannah Parris, Andrew Wright and Ian Cartwright, 'The Challenges of Fisheries Governance Post UNFSA: The case of the Western and Central Pacific Fisheries Commission' in R Quentin Grafton, Ray Hilborn, Dale Squires, Meryl Williams and Maree Tait (eds), *Handbook of Marine Fisheries Conservation and Management* (2010).

¹⁴ Secretariat of the Pacific Community, *Secretariat of the Pacific Community Vision and Mission* (2005) <http://www.spc.int/corp/index.php?option=com_content&task=view&id=22&Itemid=73> at 3 December 2008. SPC was the first of the regional forums to be established. It was founded in 1947 by the colonial powers of the time: Australia, New Zealand, Netherlands, France, United Kingdom (UK) and the United States of America (US). The membership evolved through the period of de-colonisation and now includes the independent Pacific island states (Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea (PNG), Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) the Pacific island territories (American Samoa, French Polynesia, Guam, New Caledonia, Northern Mariana Islands, Pitcairn Islands, Tokelau, Wallis and Futuna) and Australia, New Zealand, France and the US. The organisation is headquartered in Noumea, with regional offices throughout the Pacific islands region.

¹⁵ *Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest*, opened for signature 11 February 1982 (entered into force 4 December 1982) ('Nauru Agreement') available at <<http://www.ffa.int/node/93#attachments>> at 10 March 2009. PNG, FSM, Kiribati, Marshall Islands, Nauru, Palau,

island states – reflecting the relatively richer tuna resources that are found within the EEZs of these countries.

The Pacific island Parties to the Nauru Agreement (PNA) recognised that they were in a weak position when negotiating access arrangements individually with DWFNs, particularly when DWFNs actively sought to manipulate each state against each other in negotiations over access fees and conditions.¹⁶ In response, the states that would become the PNA negotiated the Nauru Agreement in order to coordinate and harmonise their fisheries management and access conditions, thereby placing themselves in a stronger strategic position when negotiating with DWFNs. The Nauru Agreement has the following objectives:

- coordinate and harmonise management of common fish stocks between PNA, without derogating any of their sovereign rights (art 1);
- give priority consideration for licensing PNA vessels over foreign vessels (art 2a);
- establish minimum terms and conditions for foreign vessel access (art 2b); and
- cooperate and coordinate fisheries monitoring, control and surveillance (arts 6 and 7).

The Nauru Agreement became the cornerstone for regional cooperation and enabled subsequent cooperative agreements to develop increasingly harmonised approaches to common fisheries that would extend beyond the limited membership of the PNA.

Pacific island cooperation further developed in the late 1980s in response to the growing conflict between Pacific island states and the USA via the latter's refusal to recognise EEZ rights in the context of highly migratory tuna stocks. Negotiations during 1987 between the Pacific island states and the US culminated with the adoption of the Treaty on Fisheries Between the Governments of Certain Pacific Island States and the Government of the United States of America (USMLT).¹⁷ The USMLT commenced operation in 1988 and has since been renewed three times, becoming a major plank of

Pacific-US relations. The USMLT is a multilateral treaty negotiated with all FFA members. It comprehensively covers issues such as licence numbers, access conditions, access fees and reporting obligations. The treaty allows a US fleet of distant water fishing vessels to roam freely between the EEZs of FFA countries in return for access fees and the establishment of a development assistance fund.

Cooperation further developed during the late 1980s and early 1990s as Pacific island members of the PNA became increasingly concerned at the rapid expansion of the purse seine fishery and its potential impact on the long term sustainability of the WCPO tuna fisheries. In light of these concerns, PNA initiated discussions in 1990 to develop arrangements that might limit purse seine numbers within the PNA sub-region. During these discussions, the PNA agreed to introduce interim limits on how many purse seine vessels they would license to fish in their collective EEZs while negotiating a more comprehensive arrangement to limit purse seine fishing across all PNA EEZs. In 1990, PNA agreed to provisionally limit the number of purse seine vessel licenses to 164 purse seine vessels but by 1993, this limit had increased to its final maximum of 205.¹⁸ These increases were due to pressure from DWFNs to license vessels and problems faced by national and regional fisheries management institutions in verifying exactly how many purse seine vessels were actually licensed across all PNA EEZs.¹⁹

In 1993, the Pacific island members of the PNA concluded negotiations and signed the legally binding Palau Arrangement for the Management of the Purse Seine Fishery in the Western and Central

Solomon Islands were all original signatories. Tuvalu subsequently became a party in 1991.

¹⁶ Michael Lodge, 'Minimum Terms and Conditions of Access: Responsible Fisheries Management Measures in the South Pacific Region' (1992) 16 *Marine Policy* 277.

¹⁷ *Treaty on Fisheries Between the Governments of Certain Pacific Island States and the Government of the United States of America*, opened for signature 2 April 1987 (entered into force 15 June 1988) reprinted in 26 ILM 1048.

¹⁸ Steve Dunn, Len Rodwell, Glen Joseph, 'The Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery – Management Scheme (Vessel Day Scheme)' (Paper presented at the Sharing the Fish Conference, March 2006, Perth Western Australia), available at <<http://www.fish.wa.gov.au/docs/events/ShareFish/papers/pdf/papers/GlenJoseph.pdf>> at 1 March 2010.

¹⁹ See Transform Aqorau and Anthony Bergin, 'Ocean Governance in the Western Pacific Purse Seine Fishery: The Palau Arrangement' (1997) 21 *Marine Policy* 173; Michael Lodge, 'The Development of the Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery' (1998) 22 *Marine Policy* 1; Transform Aqorau, 'Recent Developments in Pacific Tuna Fisheries: The Palau Arrangement and the Vessel Day Scheme' (2009) 24 *The International Journal of Marine and Coastal Law* 557. The development of the Palau Arrangement caused much concern among DWFN and raised significant opposition as they, correctly, saw this as the beginning of a gradual re-balancing of power of tuna resources between fishing and coastal states.

Pacific²⁰ which subsequently entered into force in 1995. Prior to the establishment of the WCPFC, the Palau Arrangement was the only mechanism available to control purse seine fishing effort in the WCPO.

The Palau Arrangement aims to protect tuna stocks from overfishing and improve the economic benefits to Pacific island members of the PNA from access fees and fisheries development. It does this primarily by limiting the licenses available to fish within the PNA EEZs (therefore limiting catches and hopefully increasing prices) and enabling further cooperation in management of the purse seine fisheries between PNA. Given its exclusive coastal state membership, the scope of the Arrangement was effectively limited to EEZs. However, the preamble to the arrangement also contains statements that emphasise the special interest that coastal states have in tuna in adjacent high seas areas.²¹

Concurrent to these developments, FFA member interests in developing their own fisheries grew throughout the 1980s and 1990s and many Pacific island states aspired to replace DWFN fleets with locally based domestic fleets. In support of these aspirations, PNA members established the FSM Arrangement for Regional Fisheries Access.²² The Arrangement further elaborated the Nauru Agreement's objectives of supporting local development and promoting PNA vessels over DWFN vessels. In this regard, the FSM Arrangement provided for lower cost licenses and access to the waters of all PNA states for domestic and locally based vessels that met specific criteria.

Taken together, the essence of these arrangements is a mutual agreement to coordinate national purse seine management policies through a global

restriction on the number of purse seine vessels able to access the fishing grounds. The objective of this approach was to restrict fishing activity, under each national fishing management regime, and thereby harvests of the key target species of skipjack tuna and yellowfin tuna. This was intended to promote the sustainability of the tuna resources and increase the level of economic returns obtained by the PNA and FFA states from their tuna resources. This is reflected in the preamble of the Palau Arrangement which states:

Recognising the responsibilities of coastal states and fishing states to cooperate with each other in the conservation and management of the living marine resources...and mindful of the dependence of countries of the South Pacific upon the rational development and utilization of the living marine resources and the continued abundance of these resources.²³

Implementation of the agreement remained a national responsibility and, if successful, would ensure that harvests would be maintained at 'sustainable' levels,²⁴ the total supply of canning tuna would be restricted on the world markets, and consequently, the price of the tuna, and the value of the fishery would increase. It was argued that this would benefit Pacific island states through higher access fee revenues collected through licensing DWFN vessels and other vessels to operate in EEZs.²⁵

The question of allocating vessel limits was resolved through honouring the terms of the US Treaty (which allowed for 40 vessels) and then allocating most of the remaining vessels to existing DWFNs. Additional allocations, with favourable terms of access, were set aside for fishing for domestic vessels under the FSM Arrangement. This was intended to encourage domestication of purse seine vessels and met with some moderate success.²⁶

²⁰ *The Palau Arrangement for the Management of the Purse Seine Fishery in the Western and Central Pacific*, opened for signature 19 September 1990 (entered into force 1 November 1995). <<http://www.ffa.int/node/91#attachments>> at 14 March 2010. Annex 1 was revised at the Thirteenth Annual Meeting of the Parties to the Nauru Agreement, 27-29 April 1994.

²¹ For further discussion see, eg, Vina Ram-Bidesi, 'Regional Arrangements for Management and Development of Tuna in the Pacific Islands: The Case Study of Palau Arrangement and the Federated States of Micronesia Arrangement' (Paper for the International Institute of Fisheries Economics and Trade Conference, Victoria University of Wellington, New Zealand, 19-22 August 2002).

²² *Federated States of Micronesia Arrangement*, opened for signature 30 November 1994 (entered into force 23 September 1995) ('FSM Arrangement') available at <<http://www.ffa.int/node/30#attachments>> at 14 March 2010.

²³ Palau Arrangement, above n 20. See also Aqorau, above n 19.

²⁴ Les Clark, Ray Research. Interviewed by author in Honiara, Solomon Islands, 7 April 2006.

²⁵ Les Clark, *Pacific 2020. Background Paper: Fisheries* (2006). In general, access fees were expressed as a percentage of the value of the fish harvested within an EEZ, with access fee negotiations focused on determining expected levels of catch, expected prices and percentage rates (usually around 5-6 per cent).

²⁶ Hannah Parris, Kate Barclay and Ian Cartwright, *Review of the Federated States of Micronesia Arrangement* (2007). First, it appears that the FSM arrangement has spurred some PNA to invest in the harvesting sector. Second, it has encouraged foreign direct investment into PNA to obtain fishing licenses for all PNA waters. See Havice, above n 6. However, for various reasons, the FSM Arrangements seems to have had limited success in domesticating vessels from

Cooperative approaches to fisheries monitoring, control and surveillance

Immediately after concluding the Nauru Agreement, the Pacific island members of the PNA began negotiating the first of three implementing arrangements that would operationalise the treaty's objectives.²⁷ The First Implementing Arrangement to the Nauru Agreement²⁸ was adopted in September 1983 and established agreed Harmonised Minimum Terms and Conditions for foreign fishing vessels (HMTCS). While these conditions were originally intended to apply only to PNA, the broader FFA endorsed a draft of the conditions during their negotiations and began a parallel initiative that quickly extended the application of the HMTCS to the entire FFA membership. The HMTCS harmonised licensing procedures and catch reporting and established a regional register of fishing vessels. Each Pacific island state is responsible for the implementation of these conditions at the national level.²⁹

In April 1990, following a significant increase in the number of vessels fishing in PNA waters and a desire from some PNA to review the HMTCS, the PNA commissioned a legal drafting group to prepare a draft second implementing arrangement. The Second Implementing Arrangement to the Nauru Agreement³⁰ came into effect in January 1991 and expanded the HMTCS to incorporate observer requirements, prohibit transshipments at sea, expand monitoring and surveillance, and

introduce an annual registration for the regional vessel register. Once again, the broader membership of the FFA endorsed the PNA's expanded HMTCS and agreed that the conditions should be implemented throughout all FFA EEZs³¹

Regardless of these new agreements on harmonised licensing conditions, Pacific island states still suffered from a lack of capacity to patrol and monitor their massive EEZs. In response, the Pacific island members of the FFA adopted a treaty framework in 1993 that enabled FFA member states to cooperate in surveillance and enforcement and share surveillance assets.

The Niue Treaty on Co-operation in Fisheries Surveillance and Law Enforcement in the South Pacific Region³² is essentially an umbrella arrangement that supports the development of subsidiary agreements to implement surveillance and enforcement cooperation at the bi-lateral or sub-regional level. Despite some initial interest, FFA members were slow to finalise subsidiary agreements due to the high costs involved in running surveillance patrols.³³ However, while negotiation of subsidiary agreements was slow, FFA members began to cooperate more actively in joint surveillance operations through Memorandum's of Understanding (MOU).³⁴

Since 2000, FFA members have shown significantly more interest in surveillance and enforcement cooperation and have also expressed interest in inviting non-FFA states, particularly France and the US, to cooperate more actively with FFA members in surveillance and enforcement activities. There are now four subsidiary agreements in effect,³⁵ a further six awaiting government endorsement, and an increasing number of regular multilateral fisheries surveillance operations that include Niue Treaty members and non-members providing support (such

DWFN into becoming truly locally based (or domestic) in the PNA. The Parris, Barclay and Cartwright review of the FSM Arrangement in 2007 found that there was significant variation in the amount and quality of benefits gained from the FSM Arrangement to PNA and that other factors, not related to the FSM Arrangement, were probably just as important as the Arrangement in promoting domestication and onshore development (i.e. proximity to fishing grounds, availability of land, infrastructure and services and domestic government policy).

²⁷ For details of negotiations for the First and Second Implementing Arrangement, see Lodge, above n 16; David Doulman, 'Fisheries Cooperation: The Case of the Nauru Group' in David Doulman (ed), *Tuna Issues and Perspectives in the Pacific Islands Region* (1987).

²⁸ First Implementing Arrangement (1983). Full title: An Arrangement Implementing the Nauru Agreement Setting Forth Minimum Terms and Conditions of Access to the Fisheries Zones of the Parties. Copy available in Appendix 2 of Lodge, above n 16.

²⁹ Aqorau, above n 10.

³⁰ Second Implementing Arrangement (1991). A Second Arrangement Implementing the Nauru Agreement Setting Forth Additional Terms and Conditions of Access to the Fisheries Zones of the Parties. Copy available in Appendix 2 of Lodge, above n 16.

³¹ Forum Communiqué of the Twenty-First South Pacific Forum. Port Vila, Vanuatu 31 July-1 August 1990. <www.forumsec.org/_resources/article/files/1990%20Communique.pdf> at 19 March 2009.

³² *The Niue Treaty on Co-operation in Fisheries Surveillance and Law Enforcement in the South Pacific Region*. Reprinted in Commonwealth Law Bulletin 702; (1993) 32 ILM (entered into force 20 May 1993) ('Niue Treaty').

³³ Transform Aqorau, 'Illegal Fishing and Fisheries Law Enforcement in Small Island Developing States: The Pacific Islands Experience' (2000) 15 *The International Journal of Marine and Coastal Law* 31.

³⁴ Most notably, Palau, FSM and Marshall Islands (which subsequently formalised the MOU into a subsidiary agreement).

³⁵ FSM, Palau and Marshall Islands; Australia and PNG; Tonga and Tuvalu; Samoa and Cook Islands.

as aerial surveillance).³⁶ FFA members are now considering the development of a multilateral subsidiary agreement and invoking Article XII(5) of the Niue Treaty to enable US and France to participate.

Similarly, during the late 1990s, the FFA discussed establishing the world's first centralised satellite based vessel monitoring system (VMS). In 1997, the entire FFA membership of Pacific island states agreed to expand the HMTCS and require all their licensed foreign vessels to report continuously to a satellite based VMS that would be operated by the FFA secretariat and would forward vessel positions to national officers to monitor.

Cooperation between Pacific island states and DWFN: The development of the Western and Central Pacific Fisheries Commission

The jurisdictional boundaries of the FFA Treaties were limited both by the extent of EEZ rights, as set out under LOSC, and by the spatial pattern of fishing resources, which determined the influence that the treaties exerted over the fleets. The reason that these Treaties focused on purse seine rather than long lining gears was due to the relative dominance of fishing activity of the former gear type within EEZs. Since the majority of longlining activity took place on the high seas areas of the WCPO, the FFA states had less power to control this activity and, despite efforts, they were never able to replicate an equivalent set of Treaties for this gear type.

The limited coastal state membership of the FFA and PNA inevitably limit their effectiveness because these organisations did not include other key fishing interests that also impacted upon the migratory tuna. Until recently, fishing effort targeting the same migratory stocks on the high seas and inside the neighbouring waters of Indonesia and the Philippines was essentially unregulated. In the early 1990s, FFA members recognised that a broader regional forum was required to engage Pacific island states with their DWFN partners, Indonesia and Philippines and enable management of migratory fisheries beyond their EEZs.

In 1994, the FFA hosted a multilateral high level conference of Pacific island states and DWFNs on the future management and conservation of straddling and highly migratory fisheries within the WCPO. This meeting agreed on the need to co-

operatively and sustainably manage WCPO tuna resources across their entire range.³⁷ This was followed by six further conferences until negotiations concluded in 2000 with the successful adoption of the Western and Central Pacific Fisheries Convention (hereafter WCPFC Convention)³⁸ which subsequently entered into force in July 2004. The objective of the WCPFC Convention, as described in Article 2, is to ensure the long term conservation and sustainable use of WCPO straddling and highly migratory fish stocks in accordance with LOSC and the Agreement (UNFSA). The WCPFC Convention establishes the decision making Western and Central Pacific Fisheries Commission (WCPFC), which meets annually, and a secretariat which is headquartered in FSM.

The Pacific island states are a critical membership bloc of the WCPFC and were a key driver behind its development. Other WCPFC members include (among others) Indonesia, the Philippines and the existing DWFNs of Japan, Korea, China, Taiwan, the US and the European Community. The WCPFC Convention binds these members to implement its provisions and WCPFC conservation and management measures. Since its establishment in 2004, the WCPFC has agreed on a number of conservation measures that impose specific obligations on all members.

The WCPFC closely follows the framework established by the United Nations Fish Stocks Agreement³⁹ and emphasises a precautionary and ecosystem-based approach to fisheries management. The WCPFC Convention applies to all waters of the WCPO, including both high seas and EEZs. However, the WCPFC Convention states in Article 4 that nothing in the Convention shall prejudice the rights, jurisdiction and duties of states under LOSC and UNFSA, and that the WCPFC shall be interpreted and applied in the context of, and in a manner consistent with, LOSC and UNFSA. This is a critical point for Pacific island states which saw this clause as recognising and protecting their sovereign rights over much of the fishery within their EEZs.

³⁶ Operations Bigeye and Island Chief in Micronesia, Operations Kurukuru and Tui Moana in Polynesia, and Operation Rai Balang between Palau and the Federated States of Micronesia.

³⁷ Tarte, above n 13.

³⁸ WCPFC, above n 3.

³⁹ Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Stocks and Highly Migratory Fish Stocks, opened for signature 4 August 1995 (entered into force 11 December 2001) <http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm> at 5 April 2005.

A critical challenge for the WCPFC will be its development of co-operative management across the high seas/EEZ nexus, and directly or indirectly, the allocation of rights to the tuna resource. There are key disagreements between DWFN and Pacific island states over how the Convention should be interpreted regarding implementation of management measures in EEZs and on the issue of allocation.⁴⁰ Both groups regularly cite articles of the WCPF Convention and UNFSA in support of their arguments.

Pacific island states note that management measures already exist within their EEZs and argue that the main purpose for the WCPFC is to regulate the high seas and ensure that stocks are not over-fished in these areas.⁴¹ This argument is supported by provisions within both the WCPFC and the UNFSA which require measures to be compatible across the high seas and the relevant EEZs, taking into account existing measures already in practice.

DWFNs argue that the WCPFC, as the primary management authority for tuna across the region, should establish management and conservation measures across the entire range of the stocks, both inside EEZs and on the high seas.⁴² These states refer to Article 10 of the WCPFC which provides that the Commission can determine the quantity of catches, levels of effort, limitations on fishing capacity and other necessary management measures throughout the convention area.

Pacific island states argue in return that the Commission can establish 'global' catch, effort and/or capacity limits across the entire Convention area, but that it is the sovereign right of coastal states to determine catches within their EEZs. This is supported by the 'without prejudice to the sovereign rights of coastal States' clause in Article 10 of the WCPF Convention regarding the

Commission's functions. Resolving these conflicts will be critical to the effective functioning of the WCPFC and its ability to agree upon, and implement effective conservation and management measures across the range of the stocks.⁴³

The case for change from a Pacific island perspective: The development of the Vessel Day Scheme

What was the case for change?

While much has been achieved by the Pacific islands region since the establishment of the FFA, conservation issues have generally taken secondary priority after development objectives. This was reflected in both the structure and operation of the FFA purse seine treaties and the decisions taken by participating countries over time.

A key weakness of the Pacific island region's fishing vessel cap was that it did not account for effort creep.⁴⁴ While the fishing vessel cap of 205 remained stable, it became increasingly apparent that it was ineffective at promoting both conservation and development interests. The vessel cap made it difficult for new fleets to enter the fishery that were more advantageous to PNA interests. A more effective mechanism was required that would enable better implementation of conservation goals and support the short and long term development interests of PNA members.⁴⁵ Key problems included the following issues:

1. The vessel limit was too high and there was a reluctance to adjust levels over time in light of new information and opportunities as the US fleet declined over time. In some years the number of active vessels operating in the region was below the notional 205 limit, possibly indicating that this limit was higher than what the fishery could profitability support.
2. Deliberate encouragement by the parties to the FSMA to increase vessels under the FSMA. It is noted that since this data was

⁴⁰ Parris et al, above n 13; Hannah Parris and Alex Lee, 'Allocation Models in the Western and Central Pacific Fisheries Commission and implications for Pacific Island States' in Quentin Hanich and Martin Tsamenyi (eds), *Legal and Policy Regimes in the Western and Central Pacific Fisheries* (2009); Adam Langley, Andrew Wright, Glenn Hurry, John Hampton, Transform Aqorau and Len Rodwell, 'Slow Steps Towards Management of the World's Largest Tuna Fishery' (2009) 33 *Marine Policy* 271.

⁴¹ Vina Ram-Bidesi and Martin Tsamenyi, 'Implications of the Tuna Management Regime for Domestic Industry Development in the Pacific SIDS States' (2004) 28 *Marine Policy* 383.

⁴² Laurence Cordonnery, 'A Note on the 2000 Convention for the Conservation and Management of Tuna in the Western and Central Pacific Ocean' (2002) 33 *Ocean Development and International Law* 1.

⁴³ Parris et al, above n 13.

⁴⁴ Effort creep can occur, for example, when fishing vessels adopt better technology that allows them to catch ever more fish. If effort is counted only in terms of number of vessels the same amount of effort can catch more fish.

⁴⁵ Len Rodwell, 'FFA Initiatives related to the Palau Arrangement, Purse Seine Management and the Management of Bigeye Fishing Mortality in the WCPO WP FTWG-6' (Paper presented to the 17th Meeting of the Standing Committee on Tuna and Billfish SCTB17. Majuro, Marshall Islands 8-18 August 2004).

collected the US fleet increased in size, although the exact extent is unknown.

3. Reluctance by PNA members to adopt further restrictions on the activities of fishing fleets in order to account for effort creep (e.g. restrictions in fish aggregation device (FAD) use or vessel size). Examination of data suggests that the FSMA vessels, in particular, were the source of most effort creep in terms of increasing vessel size and increased use of FADs.⁴⁶
4. An implicit allocation of vessel access rights to distant water fishing nations (DWFNs) and consequential difficulties in accommodating new fleets who would pay access fees on terms more favourable to the PNA.
5. Insistence that access fees be negotiated separately with DWFN. This resulted in a continuing downward pressure on access fee charges and a incentive to ensure that domestic management regimes actively encouraged vessels to enter their zones (through generous in-kind assistance, and/or by ensuring that domestic regulation did not extend significantly beyond the regional agreements).

The development of the Vessel Day Scheme

In 2007, the PNA states agreed to convert the structure of the Palau Arrangement from a vessel based scheme to one where the total number of fishing days permitted in the fishery were capped within a Total Allowable Effort (TAE) designated in 'fishing days'. Known as the 'Vessel Day Scheme' (VDS),⁴⁷ the objective was to re-allocate the quasi-property rights away from the 'right to operate a vessel', which primarily lay with the existing DWFNs, to the PNA coastal states themselves. The VDS became operational on 1 December 2007. It would increase the bargaining power of PNA states vis-à-vis bilateral access arrangements, as well as allowing other interested DWFN fleets to participate (and therefore expand the demand, and consequently

value, for bilateral access). Within the VDS, the total allowable effort (TAE) target would act as the tool for determining 'limits consistent with resource sustainability' while allocation between PNA states was based on the unusual formula that combined estimates of shares in biomass within PNA EEZs with actual fishing history.

The VDS enabled PNA to account for effort creep by differentiating fishing days based on vessel length and allowing for vessel formulas to be modified over time to account for changes in technology and efficiency. A key objective of the VDS is to create competition between DWFN vessels to purchase fishing days at the maximum price. As the VDS has been introduced, allowances have been made for vessels that fish under an agreement between the USA and the Pacific island states (the USMLT) and the FSM Arrangement which was allocated a pooled effort target.

There remains many similarities between the original Palau Arrangement and the VDS – most notably that individual PNA countries retain their bilateral access arrangements while the FSMA and the USMLT maintain their 'bilateral' character. However, the VDS does introduce some innovations include allowing days to be 'traded' between PNA states, and a measure to manage capacity growth by adjusting the value of a 'fishing day' according to the size of the vessel.⁴⁸

In 2008, the PNA adopted additional measures⁴⁹ which are designed to further curb purse seine effort for those vessels operating within their waters. These measures include:

- 100 per cent observer coverage on purse seine vessels operating in their EEZs;
- a three month closure on FAD fishing in the third quarter of the year; and
- closure of high seas pockets.⁵⁰

⁴⁶ Hannah Parris, *Governing Complex Commons: Essays in Regional Tuna Management in the Western and Central Pacific Ocean* (Doctoral Thesis, The Australian National University, 2009).

⁴⁷ Forum Fisheries Agency, *Information Sheet 07/01: Vessel Day Scheme (VDS) Implementation (Parties to the Nauru Agreement)* (2007) available at <www.ffa.int/system/files/VDS+information+Sheet+07_01.pdf> at 4 March 2008.

⁴⁸ For those vessels with less than 50 metres, one 'fishing day' under the VDS is accounted for as half a day, for vessels with length between 50-80 metres, one VDS 'fishing day' is counted as one full day and for vessels with length over 80 metres, one VDS 'fishing day' is counted as one and a half days. Previous rules relating to the negotiation and payment of access fees, reporting obligations and rules relating to operation of vessels within the fishery grounds remain as they were under the previous Palau Arrangement.

⁴⁹ A Third Arrangement Implementing the Nauru Agreement Setting Forth Additional Terms and Conditions of Access to the Fisheries Zones of the Parties. Forum Fisheries Agency (FFA). Honiara. Solomon Islands referred to as the 'Third Implementing Arrangement'.

⁵⁰ See Forum Fisheries Agency, *PNA Ministers Adopt Tough Conservation and Management Measures to Address*

These measures only apply to foreign vessels operating in PNA waters. They do not apply to domestic or domestically based vessels. They are currently being implemented.

Operators of fishing vessels may voluntarily accept or refuse this new licensing condition. Vessels may continue fishing on the high seas if the operator wants to, but in so doing they may not fish in PNA EEZs. As such, the third implementing arrangement does not breach the freedom of the seas that is enshrined in Article 87 of LOSC. However, given that the PNA EEZs contain the most productive fishing grounds, the combination of the third implementing arrangement and the VDS is a powerful tool for managing fishing effort across the entire high seas/EEZ fishing area. Despite significant opposition from DWFNs, the PNA signed the Third Implementing Arrangement⁵¹ in Palau in May 2008.

Benefits of the Vessel Day Scheme

The development of the VDS arose from the growing dissatisfaction over the conservation outcomes of the Palau Arrangement, and a sense that sufficient economic opportunities were not forthcoming from bilateral partners, or from vessels under the FSM Arrangement. Like the original Palau Arrangement, the full implications of the VDS will only become apparent over time. In the interim, the structure of the arrangement, and the manner in which it is currently being implemented, allows for some preliminary comments on its effectiveness at addressing the perceived shortcomings of its predecessor, and its support for conservation and political objectives of the region.

Political and economic outcomes

The VDS seeks to advance the political and economic position of the PNA, and the FFA more broadly, in a number of areas. The masterstroke of the VDS was the reallocation of the implicit property rights over the purse seine fishery away from existing DWFNs (Japan, Korea, China, Taiwan and others) to an explicit allocation of purse seine effort to coastal states in line with their rights and responsibilities under LOSC. In this way, PNA

states can and (anecdotally) are increasing their economic and political bargaining power with respect to obtaining higher access fees, or other benefits, from bilateral distant water fishing fleets. Allocating resources in this way provides the additional boost of allowing PNA countries to look beyond traditional DWFNs partners and to broaden the potential market for access rights to individual EEZs. This, it is anticipated, will increase competition (and hence benefits) for access to EEZ fishing grounds.

The income boosting potential of the VDS is reinforced by provisions that allow PNA countries to purchase 'Days' from each other. This has the potential of creating additional revenue streams to smaller Parties, which traditionally do not attract purse seine effort in their EEZ (such as Palau and Tuvalu).

At this early stage of implementation, evidence for the success of the VDS is not yet conclusive, although it appears that progress is being made in several areas. First, it appears that business entities from DWFNs (predominately the Philippines, Taiwan, and to some extent Japan and China) are actively investing in 'on-shore' developments in PNA countries. This is most notable in PNG and to some extent Solomon Islands and the Marshall Islands. Operating a canning related facility is more expensive and difficult than operating from the home country, but the pace of investment appears to be growing, fuelled by a general view in the industry that without such business relationships, foreign industry will, in future, be 'cut out' of the Pacific.

Secondly, in matters of politics and influence, the VDS appears to have significantly boosted the collective capacity of Pacific island states to resist DWFN pressure. For example, in 2006 and 2008, key arguments between coastal states and DWFNs were partly resolved in practice (although not agreed in principle) through the incorporation of the PNA VDS and the PNA Third Implementing Arrangement into WCPFC conservation and management measures. These decisions indirectly endorsed the coastal state view of compatibility and reinforced the rights of coastal states over management of highly migratory fisheries within their EEZs. The decisions made conservation and management for high seas fisheries compatible with existing management practised in EEZs. A key example of this was the endorsement of the PNA Third Implementing Arrangement's closure of the high seas pockets and its inclusion within the WCPFC bigeye and yellowfin conservation and

Overfishing (Press Release Circ08039). For a more in-depth discussion of these measures, see Transform Aqorau, above n 19.

⁵¹ A Third Arrangement Implementing the Nauru Agreement Setting Forth Additional Terms and Conditions of Access to the Fisheries Zones of the Parties. Forum Fisheries Agency (FFA). Honiara. Solomon Islands referred to as the 'Third Implementing Arrangement'.

management measure.⁵² It is highly unlikely that the WCPFC would have agreed to close any high seas areas without the PNA Third Implementing Arrangement decision to link high seas fishing to access to the PNA EEZs.

However, while there was progress on the issue of EEZ/high seas compatibility, coastal state/DWFN tensions arose in regard to the application of the WCPFC to the archipelagic waters of coastal states. Specifically, many coastal states, in particular PNG, argued strongly that the terms of LOSC, UNFSA and the WCPFC Convention itself, limited the jurisdiction of the Commission to high seas areas and EEZs. Their position was that internal and archipelagic waters are to be managed at the discretion of the coastal state. By contrast, the USA argued against such an interpretation and stated its position that the WCPFC applies to archipelagic waters, as well as EEZs and high seas.⁵³

Due to some controversy over the issue, the Chair of the WCPFC requested an opinion from the legal counsel on, among other things, the application of the WCPFC to archipelagic seas. The legal counsel referred to the WCPF Convention, LOSC and UNFSA and suggested that the WCPF Convention only has application to the high seas EEZs, and not the internal waters, archipelagic waters and territorial seas, due to qualifications in UNFSA and the Convention between 'sovereign rights' and 'sovereignty'.⁵⁴ Nevertheless, the legal counsel noted that in addition to the WCPF Convention, the LOSC and UNFSA, other principles of international law need to be considered, particularly the principle of 'good neighbourliness' which requires that states must act in good faith and ensure that activities in their territories do not cause harm or affect the

interests of other states.⁵⁵ This issue remains unresolved.

Conservation outcomes

From a conservation perspective, the VDS introduces two important innovations into the Palau Arrangement. First, unlike the Palau Arrangement, the VDS is explicitly linked to a conservation and management objective of restraining effort to 2004 effort levels. These effort levels are consistent with broader regional developments in conservation management, primarily through the WCPFC. These effort levels therefore address a weakness of the original Palau Arrangement⁵⁶ which set arbitrary vessel limits, based on the 'status quo', rather than explicitly determining 'optimal' levels.

However, key challenges remain within the design and implementation aspects of the VDS with respect to conservation. In advice provided by the Commission's scientific advisors, the Commission was warned that effort levels should not increase above 2004 levels.⁵⁷ Rather than follow this exactly, the Commission adopted the politically expedient interpretation of allowing participating states, including the PNA, to select either a baseline equivalent to effort levels expended in each zone in 2004 or an average of effort expended in each zone over the period 2001-2004. At the time, this approach was largely unproblematic due to the

⁵² See WCPFC, 'Conservation and Management Measure 2008-01' (CCM 2008-01) a copy can be found at Western and Central Pacific Fisheries Commission website: *Conservation and Management Measures and Resolutions* Updated on 5 March 2008, available at <<http://www.wcpfc.int>> at 30 May 2008.

⁵³ Western and Central Pacific Fisheries Commission 'Fifth Regular Meeting: Final Report summarising outcomes of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean', Busan, Korea, 8-12 December 2008.

⁵⁴ Western and Central Pacific Fisheries Commission, 'Fifth Regular Meeting: Draft Report' (Draft for Circulation) of a Paper summarising outcomes of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean Fifth Regular Meeting, Busan, Korea, 8-12 December 2008.

⁵⁵ This principle is perhaps most clearly articulated in Principle 21 of the Stockholm Declaration. See Declaration of the United Nations Conference on the Human Environment. Stockholm, Sweden, 5 to 16 June 1972, available at <<http://www.unep.org/Documents/Multilingual/Default.asp?DocumentID=97&ArticleID=1503>> at 14 March 2010.

⁵⁶ Transform Aqorau, 'The Federated States of Micronesia Arrangement for Regional Fisheries Access' (1997) 12 *International Journal of Marine and Coastal Law*; Lodge, above n 16.

⁵⁷ John Hampton, Pierre Kleiber, Adam Langley, Y Takeuchi and Ichinokawa, 'Stock Assessment of Yellowfin tuna in the Western and Central Pacific Ocean WCPFC-SC1' (Paper presented at the Scientific Committee First Regular Session Noumea, New Caledonia, 8-19 August 2005); John Hampton, Pierre Kleiber, Adam Langley, Y Takeuchi and Ichinokawa, 'Stock Assessment of Bigeye tuna in the Western and Central Pacific Ocean WCPFC-SC1' (Paper presented at the Scientific Committee First Regular Session Noumea, New Caledonia, 8-19 August 2005); Adam Langley, John Hampton and M Ogura, 'Stock Assessment of Skipjack tuna in the Western and Central Pacific Ocean' (Paper presented at the Scientific Committee First Regular Session Noumea, New Caledonia, 8-19 August 2005); Western and Central Pacific Fisheries Commission, 'Second Regular Meeting: Final Report' (Paper summarising outcomes of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean Second Regular Meeting, Pohnpei, FSM, 12-16 December 2005).

uncertainty associated with the advice and the necessity of reaching an agreement. However, during the 'implementation' phase of the VDS (from its formal adoption by the WCPFC⁵⁸ in 2005 and implementation on 1 December 2007) it has become increasingly apparent that effort creep has continued to undermine the conservation objectives of the scheme.

In general, the effort levels, as defined by CMM 2005-01,⁵⁹ have since continued to increase above the recommended effort levels proposed by the scientific advisors. The final VDS allocation is now approximately 12 per cent above 2004 levels. Furthermore, the increase in fishing effort is unevenly spread with PNG, Kiribati and the USMLT, accounting for the majority of the change.

The issue of the absolute TAE has been further complicated by the issue of 'shifting' baselines. For instance it is notable that the 2004 effort level was higher than the original baseline agreed to by the PNA states which initially set the TAE at the average purse seine effort expended in 2000-2002.⁶⁰ Although this could be justified on (biological) sustainability grounds, as discussed above, it nevertheless increases the number of purse seine effort days by approximately 30 per cent.⁶¹ Additionally, as with the WCPFC, the VDS does not apply to archipelagic waters. This is particularly significant in PNG's archipelagic waters with their high purse seine and FAD activity. Managing purse seine effort within archipelagic waters remains entirely outside any current cooperative frameworks and is entirely at the discretion of the archipelagic coastal state.

One of the key barriers to the adoption of tighter conservation targets is the disjunction between those who are deemed 'responsible' for conservation measures in the WCPFC and those who may enjoy the conservation benefits in the future.⁶² This is

particularly the case for addressing bigeye conservation needs where the PNA states, the primary beneficiaries of the purse seine fishery, are being required to limit the benefits they derive from the fishery for the preservation of benefits accruing to other, non-PNA, longline states. To further complicate matters, bigeye tuna, while not being a primary target for them does nevertheless represent a valuable addition to their small domestic long line fisheries and is an important resource for other FFA states.

The PNA have correctly recognised that addressing this issue requires broader cooperation with the WCPFC and the Third Implementing Arrangement can be interpreted as one response to this situation. Despite these efforts, there remains the ongoing challenge that the VDS is poorly designed to address bigeye conservation. This is because it is focused on limiting the effort of purse seine gear, which, in turn, is an imprecise mode of control over the matter of concern: bigeye tuna catches.

Its use in this manner is inefficient in the sense that catches of valuable skipjack tuna, that are not under biological threat, are unnecessarily affected. For the PNA states, this situation is arguably unfair because they are bearing a disproportionate amount of costs compared with the benefits they gain from bigeye conservation. This view underpins the PNA's demand for compensation on this issue. It is clear that resolution of this dilemma will require further adjustments to the operation of the VDS. One option, as discussed by Parris,⁶³ is to extend property rights, at least over bigeye tuna, as a mechanism for shifting the costs of bigeye conservation towards those who may benefit from them.

Capacity management in the VDS

The potential for substitution effects within the purse seine fleets, leading to effort creep within participating fleets, is receiving more attention within the VDS framework. This is through measures that adjust the number of available days according to vessel size, and the Third Implementing Arrangement which further restricts vessel activities for distant water fishing fleets. However, if the objective of VDS is to promote 'optimal' capacity for conservation purposes, it remains the case that several aspects of the VDS, in

⁵⁸ This was agreed to under Western and Central Pacific Fisheries Commission 'Conservation And Management Measures For Bigeye And Yellowfin Tuna In The Western And Central Pacific Ocean CMM 2005-01' (Adopted at Second Regular Session, 12-16 December 2005, Pohnpei, Federated States of Micronesia)

⁵⁹ Ibid.

⁶⁰ Rodwell, above n 45.

⁶¹ Rodwell, above n 45, reports that the original TAE for the first three years of operation (i.e. 'Management Period') is set at 27 386 days, while the PNA recently announced that the actual days allocated was 35 738 days (an increase of 30.49 per cent).

⁶² For a fuller discussion see Hannah Parris, 'Is the Western and Central Pacific Fisheries Commission Meeting its

Conservation and Management Objectives?' (2009) 53 *Ocean and Coastal Management* 10.

⁶³ Parris, above n 46.

particular its integration with the USMLT and FSMA Treaties, potentially remain problematic.

The primary problem is that the VDS, largely for historical reasons, has created an actual or proxy 'Olympic style'⁶⁴ fishery for vessels operating under the FSMA and the USMLT Treaties. This is achieved by the imposition of an actual global limit on days available to the FSMA vessels and a notional global limit applied to the USMLT vessels. These limits are applied specifically to the domestic Pacific and the US purse seine fleets operating within the WCPO and in effect constitute a circumscribed set of quasi-exemptions to the broader WCPFC management measures for purse seine vessels which are continually striving to restrict and reduce total effort.

This policy environment provides a strong incentive for vessels owners who are eligible to operate under these treaties to increase their per vessel capacity and, where possible, to increase vessel numbers as well. For example, the current USMLT restricts the number of USA vessels that can be licensed under the USMLT to 45 vessels. However, at the turn of the century the number of vessels licensed under the treaty declined to a low of 11 due to economic factors. Since then, vessel numbers have dramatically increased for two reasons. First, the US removed its restriction on vessel origin and now allows foreign built (and significantly cheaper) vessels to be licensed under the treaty. Second, the imminent implementation of fishing limits by the equatorial Pacific island states created an incentive for vessels to come under the USMLT umbrella to avoid restrictions on fishing effort applied to other DWFN vessels.⁶⁵

There is also the potential for other sources of capacity slippage to become problematic over time. The first of these relates to the technical infrastructure underpinning the VDS and the interplay with the monitoring, control and surveillance systems. Critical to the success of the VDS is a functional and reliable Vessel Monitoring System that is underpinned by rigorous enforcement mechanisms. Without these two complementary strategies, it is possible that the number of days actually fished by vessels will exceed their allocated

amount, and therefore risk generating gradual capacity creep over time. While the monitoring, compliance and surveillance frameworks described above represent an impressive regional infrastructure, their success depends on a strong enforcement capacity at the national level which unfortunately has been an area experiencing significant problems in some PNA states.⁶⁶

Another potential source of capacity slippage is the ability to bring days forward from future year allocation. In theory, 'borrowing' days from the future should not be a significant problem provided that the total number borrowed is not large. However, to avoid significant capacity over run in following years, this strategy requires significant political and economic discipline within national fisheries administrations in the face of intense DWFN (and possibly domestic) pressure to increase fishing, particularly on the abundant skipjack tuna stocks.

Conclusion

The key objective for the Pacific islands states is to 'maximise the economic returns' through a variety of strategies to ensure that tuna stocks are managed on a sustainable basis in order to underpin future economic opportunities associated with the resource.⁶⁷ Taken together, a key achievement of the FFA Treaties was that they provided the FFA states, and the PNA states in particular, with a politically strategic, as well as a practical platform, from which to pursue these economic and political interests with respect to the tuna resources.

The advantages of the regional agreements occurred simultaneously through several mechanisms. First, the concurrent development of a regional cooperative MCS regime with operations coordinated by the FFA Secretariat was a critical enabling tool for states unable to afford their own comprehensive MCS regime. These MCS Treaties provided members with vital facilities such as observers, vessel monitoring services, agreement and enforcement on the ban of at-sea trans-

⁶⁴ 'Olympic' is a commonly used fisheries management term that describes unallocated fisheries with a general limit that applies indiscriminately. This encourages participants to fish as much as they can, as early as they can, to ensure they do not miss out before the limit is reached.

⁶⁵ Forum Fisheries Agency, 'Internal Briefing Paper for Parties to the Nauru Agreement on issues relating to the USMLT and Vessel Day Scheme' (2008).

⁶⁶ See Quentin Hanich, Feleti Teo and Martin Tsamenyi, 'Closing the Gaps: Building Capacity in Pacific Fisheries Governance and Institutions' (2008) (Report to Forum Fisheries Agency and Australian Government Department of Agriculture, Fisheries and Forestry).

⁶⁷ Kate Barclay and Ian Cartwright, *Capturing Wealth from Tuna: Case Studies from the Pacific* (2007); Vina Ram-Bidesi, 'Domestication of the Tuna Industry in the Pacific Islands: An analysis of National and Regional Strategies' (PhD Thesis, University of Wollongong, 2003); Ram-Bidesi and Tsamenyi, above n 45.

shipment, register of vessels and critical data to support enforcement should states wish to do so. These activities provided a dual service to the FFA members: they provided data for the purposes of stock management, but, more critically, provided the information sources needed to underpin negotiations for access agreements and consequently for determining licence fees payable to the FFA member governments. As a consequence, a major achievement of the Palau Arrangement, and the FFA more broadly, was to put in place the legal, institutional and technical infrastructure to enable states to assert, defend and enjoy the benefits from the EEZ rights granted to them under the LOSC.

The second strategic advantage afforded by the PNA treaties centred around the gradual development of the PNA states around a unified regional process based on perceived common interests in the purse seine fishery. Based around the common modus operandi of collective management (regular meetings, building of interpersonal relationships, development of common positions on issues and joint decision making) the PNA group, in effect, established a recognisable identity within regional tuna politics. The value of this was underscored with the advent of the WCPFC. Strong cooperative mechanisms between the FFA states, particularly the PNA states, became a key strategic advantage in negotiations with other WCPFC parties over a wide range of issues pertaining to the development of the WCPFC as well as to matters of policy itself. This was exemplified in the adoption by the WCPFC of the VDS as an official management measure.

A less obvious, but equally powerful strategic advantage of the purse seine treaties was the subtle and gradual influence that they had in re-drawing the power relationship between the PNA group, as coastal states, and the major DWFNs. The PNA treaties, in particular the FSMA, were in part an expression of what Schurman⁶⁸ calls 'resource nationalism' that arose during the 1990s. By encoding and enforcing these nationalistic ideals into international treaty, the DWFNs were forced, over time, to recognise the legitimacy of these views and shift their perspective of FFA states from being merely 'sellers' of a low value natural resource to being 'partners' in the future development of the industry.

The recent achievements within the WCPFC, particularly the bigeye and yellowfin conservation

measure, further demonstrate the strength of the FFA and PNA sub-group when they negotiate collectively. Similarly, the achievements of the FFA and PNA management, control and development mechanisms demonstrate the potential of this sub-regional grouping to manage fishing efforts throughout its area in the direct interests of its members, and to extend its influence beyond its immediate boundaries. While neither the current VDS nor WCPFC conservation and management measures yet meet conservation requirements as recommended by SPC and the WCPFC Scientific Committee, they provide the initial framework due almost entirely to the drive of the FFA and PNA.

Fisheries policy development in the Pacific has historically been an iterative process, with new developments arising from and building upon existing efforts. The VDS now reflects more closely the Pacific island aspirations to take a proactive approach to develop their own fisheries and progress their own aspirations. Importantly, the VDS has been developed and adapted to operate within the available governance capacities of the region. This is an important issue in the Pacific islands where governance resources are highly limited.⁶⁹

The key success of the VDS is the strength of its framework design. Yet achieving its potential depends on the resolution of remaining design issues, primarily the remaining olympic nature of the fishery (that creates significant upwards pressure on effort) and successfully finding ways to resolve the bigeye tuna problem. It will also need to overcome the key challenges with implementation: baseline creep, and MCS. As pressures grow, and global fishing fleets become more aggressive in their hunt for open fishing grounds, resolving these challenges and building strong cooperative institutions will become increasingly critical to the effective management, development and control of the Pacific island tuna fisheries.

⁶⁸ Rachel Schurman, 'Tuna Dreams: Resource Nationalism and Pacific Islands' Tuna Industry' (1998) 29 *Development and Change* 107.

⁶⁹ Hanich et al, above n 66.